SSD Firmware Update Utility Guide

Micron RealSSD™ C400 SED Firmware Revision 03TF

Firmware Update Guide for Windows (Update from Rev 000B/040B to Rev 03TF)

Introduction

This document describes the process of updating the firmware on the Micron RealSSD™ C400 self-encrypting drive (SED) using our Windows update utility. The utility is a single executable file that contains all the code necessary to perform the upgrade. The creation of a separate bootable device is not necessary.

This program is to be used for updating the Firmware **from Revision 000B or 040B to Revision 03TF**.

PLEASE NOTE: This firmware update is ***not applicable*** to any Micron SSD which was purchased as original equipment in a computer system. Any firmware updates for such drives, if necessary, will be made available by the computer manufacturer. This firmware update is **not** applicable to any Micron RealSSD C300 drive. It should not be used with any non-encrypted Micron RealSSD C400 drive.

WARNING: As with all firmware updates, it is strongly recommended that you backup or make copies of all important files before performing this update. This firmware update process is done entirely at your own risk. If performed correctly, there will be no loss of system or user data on the drive. However, if the firmware process is interrupted for any reason, your solid-state drive may not function properly. If this update is done on a notebook computer, it is strongly recommended that power be supplied by the AC power adapter.

NOTE FOR LOCKED ENCRYPTED DRIVES: The Micron RealSSD™ C400 SED will not respond to the firmware download command if it is in locked mode. Please consult the user instructions for your encryption key management software or contact your Information Systems Administrator for instructions on how to unlock your SED. For security purposes, the drive should be immediately relocked or the encryption software immediately re-initialized after updating firmware.

General Instructions

Complete the following steps before starting the firmware update process:

1. **Backup the Solid-State Drive**

   It is highly recommended that full system backup be completed before starting this firmware upgrade procedure. If the upgrade is interrupted (by a power loss or hardware failure of some sort), it is possible that the solid-state drive may not function properly.

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2. **Use AC Power**

   Ensure your mobile PC or desktop PC is plugged in to AC power during the update process. It is not recommended to use only battery power during the upgrade. Do not remove power at any time during the firmware update process as this could produce incomplete results and may render your solid-state drive unusable.

3. **Disable/Remove Drive Passwords**

   Password protection, such as OS drive encryption or BIOS-level passwords can block firmware updates. Drive encryption can be disabled in the OS or software tool you use for encryption. To disable a BIOS password, you may need to edit your computer's BIOS settings. Please see your computer's owner's manual for details on editing these settings. Enter the BIOS (typically by hitting the "Delete," "F2," or "F12" key during start-up screen) and disable any passwords that you may have set on the SSD.

   Any encryption key management software must be disabled. The SED must be in unlocked or uninitiated mode. Trusted Computing Group (TCG) protocols prohibit any firmware update of a locked data storage device. Please consult the user instructions for your encryption key management software for instructions on unlocking your SED. Under certain enterprise deployments of data security software, a system administrator may need to intervene to unlock the SED.

Download the Firmware Update

1. Before beginning the firmware download process, close all other programs except for your Internet browser.
2. Find the **Firmware Windows Update Utility** associated with your Micron SSD at: micron.com/ssdfirmware.
3. Click the **link** for the Firmware Windows Update Utility and select **Save** to download the ZIP file containing the firmware update utility to your system.
4. Double-click the ZIP file to extract the files inside. Save them to your desktop.

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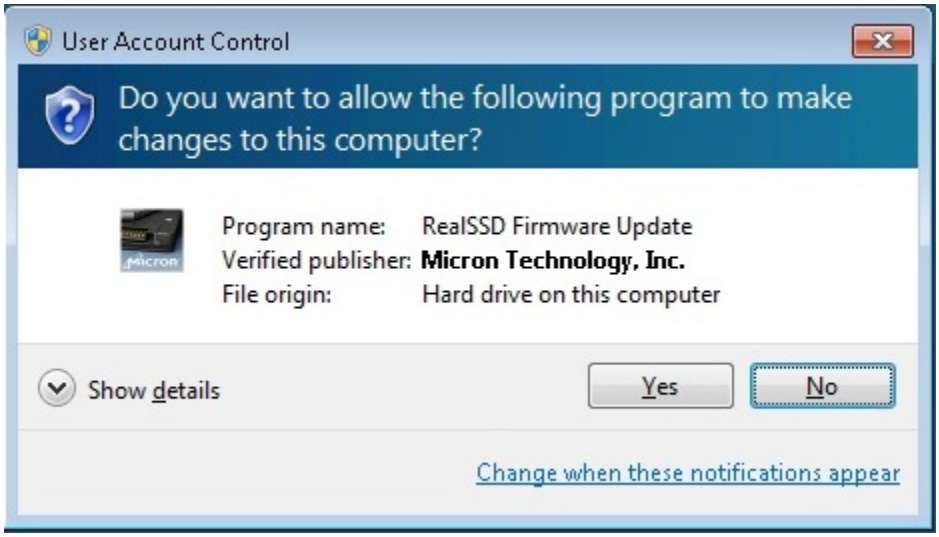
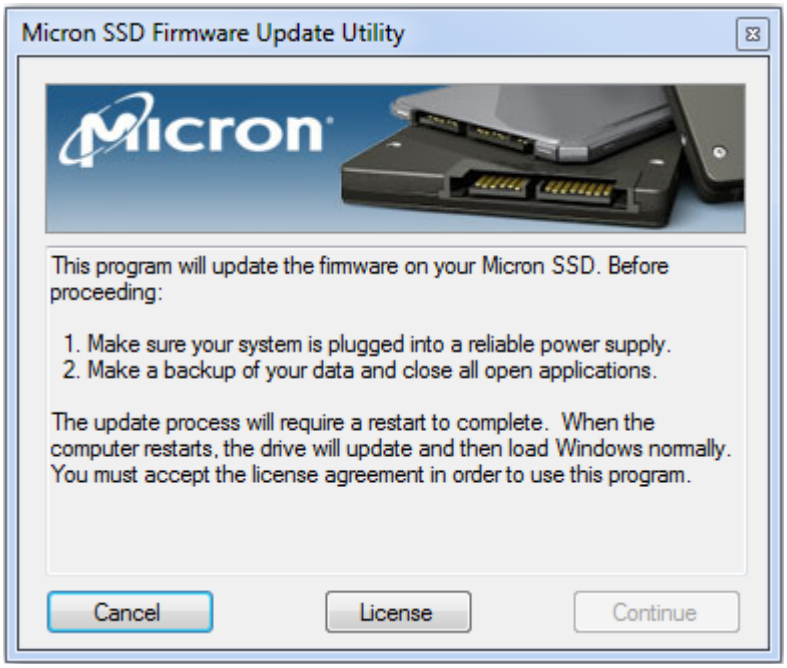
Run the Firmware Update

1. If not already done, copy the update utility file to your desktop.
2. Double-click the icon to launch the update utility.
3. A User Account Control box will open:


User Account Control
Do you want to allow the following program to make changes to this computer?
Program name: RealSSD Firmware Update
Verified publisher: Micron Technology, Inc.
File origin: Hard drive on this computer
Show details
Yes
No
Change when these notifications appear

Ensure that the Verified Publisher is clearly listed as "Micron Technology, Inc." If this is not the case, select "No" to abort this operation. Click "Yes" to proceed if the file is properly signed.

4. You must accept the License Agreement to proceed. When you see the following window, click on the "License" button.


Micron SSD Firmware Update Utility
This program will update the firmware on your Micron SSD. Before proceeding:
1. Make sure your system is plugged into a reliable power supply.
2. Make a backup of your data and close all open applications.
The update process will require a restart to complete. When the computer restarts, the drive will update and then load Windows normally. You must accept the license agreement in order to use this program.
Cancel
License
Continue

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5. Scroll through and read the Software License Agreement. If you wish to proceed, then click the "Accept" button to continue.
6. The utility is ready to start the update process. Before clicking "Continue," ensure that all other work is saved and that open applications are closed. Clicking "Continue" will start the process by closing Windows and restarting your computer.

7. Your computer will restart and boot into the update tool. You will see the following on your screen:

8. After the update tool has fully loaded, you will see the following:

The current firmware revision number will be listed immediately below your drive's serial number. If your C400 drive is not listed in the screen display as above, please see the "Troubleshooting Tips" section below.

9. The utility will immediately update the firmware on your drive, indicated by the following:

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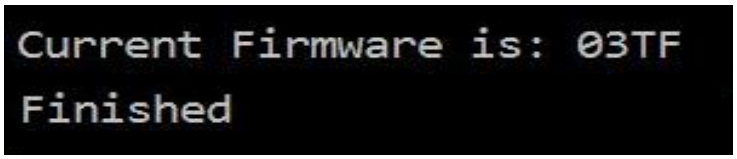
10. On most systems, this process will take 30 to 60 seconds. Some systems may require a longer time to complete.
11. Upon completion, the following message will display:



12. After several seconds, the system will reboot again, restarting Windows.
13. When Windows successfully restarts, the firmware update process is complete.
14. Once the firmware update is complete, you should immediately lock your SED (or reinitialize the encryption software). Please consult the instructions for your encryption key management software or contact your system administrator as needed. Data stored on the SED may not be secure unless this final step is taken.

Troubleshooting Tips

- Trusted Computing Group (TCG) security protocols prohibit any firmware update to a locked SED. Please ensure that your encryption key management software is in the unlocked or uninitiated mode prior to applying the firmware update. This may leave your data in an unsecure state, so you should immediately re-enable the encryption key management software after the firmware update is complete.
- Although efforts have been made to test the compatibility of this software with various system and chipset configurations, it is not possible to test every available system. Therefore, certain systems (e.g., older systems) may experience compatibility problems.
- If you experience issues after the tool reboots, verify that you have disabled any drive passwords BIOS.
- If your RealSSD C400 drive is not recognized in Step 8 of the "Run the Firmware Update" section above, it may be necessary to run this update in IDE mode instead of AHCI mode, on some older systems. When it is necessary to change the system to IDE or AHCI mode, it may be necessary to reboot the system using external media, such as a bootable CD-ROM. Instructions for running the 0309 update from bootable media are available on the SSD Support page at micron.com/ssdfirmware.
- Some systems prevent firmware updates when in RAID mode. In this case, changing to AHCI or IDE mode may help to complete the update process. Any RAID configurations should be preserved after the update, when the system is put back into RAID mode, but check with your system's user manual before proceeding.
- Peripheral RAID cards will not pass the necessary commands to perform firmware updates. You may need to move the target drive onto a SATA host bus adapter or SATA connector on the motherboard that facilitates these commands.

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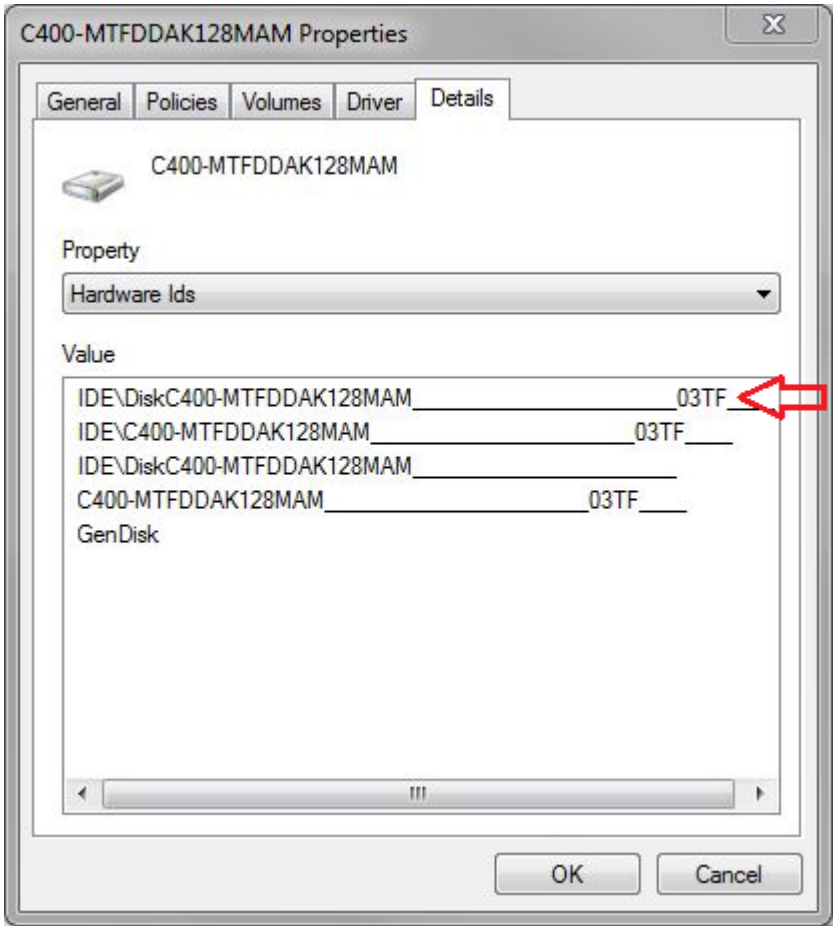
Validating the Current Firmware Revision

Windows 7 allows the user to check the current firmware revision of the SED by following these steps:

- Click the Windows "Start" button, and select "Computer."
- On the disk icon which represents your SED, right-click and select "Properties."
- In the window that pops up, select the "Hardware" tab.
- In the All Disk Drives list, highlight your C400 SED, and click the "Properties" button.
- In the next window that opens, select the "Details" page.
- Under the Property pull-down menu, select "Hardware Ids," and you will see the following display:
- The current firmware revision is indicated by the red arrow below. If the firmware revision says "03TF," no further action is necessary.



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Firmware Release Notes

Firmware for the RealSSD C400 SED is being updated from version 040B to 03TF. Changes between version 040B and 03TF include the following:

- Improved compatibility with encryption key management software from certain independent software vendors (ISVs).
- Improved compatibility with certain SAS expanders and peripheral RAID cards.
- Improved throughput stability under extremely heavy workloads.
- Improved data protection in the event of unexpected, asynchronous power loss.

This firmware update is **optional,** but recommended for any SED experiencing the above symptoms.

A Note of Firmware Naming

- The first digit is reserved and will remain "0."
- The second digit indicates the firmware minor revision.
- The third digit is a "T," indicating "Trusted Drive" as defined by the Trusted Computing Group (TCG).
- The final digit in the 4-digit firmware name indicates the major firmware revision level.

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Revision History

Rev. A..... 18 June 2012

- Initial release

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